Chem124 Spring 2015 Course Information/Syllabus

Instructor: Dr. Kristi Kincaid (DBH 242; kincaid@rice.edu)
Office hours: TBA
Classroom coordinator: Sofia Medrano (DBH 243, smedrano@rice.edu)

Course Philosophy and Aims:

This course is part of a two semester sequence designed to enhance the material from the general chemistry lecture course and prepare you to enter a scientific research environment. A main focus of the curriculum this semester is how to use data collected in lab to draw conclusions about the subject of inquiry. This second semester course will also involve more laboratory skills than the first semester. The skills (both mental and physical) that you will learn in these courses are applicable to any scientific discipline that you may pursue.

Location and time:

There are six different sections that meet each week (Monday night, Monday, Tuesday and Wednesday afternoons). Each section will follow a 2-week sequence, with the lab performed the first week, and a discussion of data analysis taking place in the second week. Sections are staggered so that there will be two concurrent sections (one in lab and one in discussion) running most weeks. ODD-numbered sections precede EVEN- numbered sections (i.e section 1 performs the lab first, then the next week has a discussion while section 2 performs the lab). A 7^{th} section will be opened if needed.

During Lab weeks, students will meet in room 214 DBH for a brief pre-lab lecture before moving to room 200. Discussion groups will meet in room 210 DBH. During your first lab, you will be assigned to one of 2 discussion groups for your section.

Schedules for each individual section are posted on OwlSpace. Given the complex nature of the scheduling for this course, it is strongly recommended that you consult YOUR sections' schedule on OwlSpace.

Course Requirements:

Academic requirements:

Attendance is mandatory for **every** lab and **every** discussion session (see "Missed Labs" section for details). If you do not attend a lab OR a discussion, you will receive zero points for that entire lab. It is the student's responsibility to document his/her attendance by signing in for each lab and discussion (including any make-up sessions). Punctuality is also mandatory**; points will be deducted from your grade for tardiness**.
Extremely late students (>15 minutes) may not be admitted to lab, at the instructor's discretion.

For each lab, you will need to turn in the following: completed pre-lab, copies of your data, initial data analysis, and final lab report. See "Lab Reports" section for details.

Materials:

It is assumed that students have a knee-length lab coat and a carbon copy notebook from CHEM 123. If not, these may be purchased from the CGSA or other sources; contact Dr. Kincaid for details. Other materials needed are included in the Chem 124 course pack, which includes:

- Lab Manual
- Disposable materials and chemicals (provided as needed in the laboratory)

Students are required to purchase the course pack. Instructions for purchase of the course pack will be given during the first day of CHEM 122 in lecture.

Safety Regulations:

Whenever you are in the lab, it is vital that you be mindful of your safety and the safety of others. At the beginning of the semester, you will need to sign a form on OwlSpace *(under tests & quizzes)* that you have read and agree to abide by the lab safety rules. These rules can be found in the Safety section of the lab manual.

You must wear the following Personal Protective Equipment (PPE) at all times while in the lab (no exceptions)

- Safety glasses/goggles
- Long-sleeved, knee-length lab coat
- Clothing that fully covers you to the ankle (loose clothing, jewelry, and unrestrained hair may pose additional risk and should be avoided)
- Closed-toe shoes with backs (perforated shoes or sandals are not allowed)

Based on the experiment or procedure, additional PPE such as gloves may be required. Laboratory gloves should only be worn inside the laboratory.

Furthermore, the instructor or lab assistant must always be physically present for you to work in the lab.

There will be **absolutely no eating or drinking** allowed in the lab. Period. It is also strongly recommended that you wash your hands upon leaving the lab.

Phones, ipods, etc. are to be silenced or turned off, and left in your bag. Use of phones as calculators poses a risk of contaminating them with chemicals.

Students will not be allowed to work the lab if they fail to meet these safety regulations

Lab Reports:

The lab procedures and reports are in the lab manual, and also will be posted on OwlSpace. Prior to lab, you will need to read the experiment for the week (including any background reading), and complete a pre-lab assignment (also in the lab manual) prior to coming to lab. You should come to lab prepared to discuss the lab in-depth and be able to make predictions about any outcomes. The pre-lab assignment must be handed in at the beginning of lab (before the pre-lab talk). Any student who does not hand in a pre-lab assignment will NOT be allowed to perform the lab.

During lab, you will record your data in your lab notebook; the specific format and requirements for the report will be explained in the individual lab procedures. Copies of your data must be turned in to your TA at the end of lab. Preliminary analysis of your data will be due to your discussion TA at the beginning of discussion the following week. A final lab report, including data analysis and additional questions, will be due to your lab TA at the beginning of your next lab section (2 weeks after data collection).

Honor policy: Lab reports fall under the scope of Rice's honor code. Discussion is an important part of the scientific process, and you are encouraged to ***discuss*** the lab with your partner, TAs, and classmates. However, you must write your own report. **Be mindful of the difference between collaboration and copying**. Lab partners must individually write their own reports, including all calculations, conclusions, and graphs.

It's **OK** to:

- Share raw data with your lab partner.
- Consult any written source except graded lab reports.
- Discuss the approach to analyzing data or solving a problem.
- Discuss and compare your final results.

It's **NOT OK** to:

- Report data that you did not measure (unless given permission, and cited appropriately)
- Copy or share computer files, even with your lab partner (except for data files).
- Copy (or print 2 copies and hand in separately) any component of the written report (including graphs and data analysis section)
- Copy someone else's calculations.
- Copy answers to problems in the reports.

Lab Notebook:

Your lab notebook is a record of what you DO and OBSERVE in lab. It is not a simple collection of data tables or a jumble of disorganized scribbles. An ideal notebook allows another scientist to recreate your experiment from only what is written down. See the "Lab Notebooks and Reports" section for more information. You will use carbon copy style notebooks, so you can turn in the copies to your TA at the end of each lab. Additional data analysis and final reports may be done on a computer or regular paper, but all of the data used must come from the information that you recorded in lab, unless you have approval to use another student's data and state where it came from and why.

Grading:

Each lab will be worth 25-105 points. These points are indicated in the manual, and will be divided as follows:

- Pre-lab assignment (10pts)-due at beginning of lab
- Data Collection (15-20pts)-due at end of lab
- Initial Data analysis (15-25pts)-due at beginning of discussion
- Final Report (35-45pts)-due at beginning of the next lab
- Lab TA points (5pts) (points awarded for safety and tidiness)
- Discussion Participation (10pts if applicable)

Points will be deducted for tardiness to class. Late reports will be penalized for each day late (10pts/day). Reports will not be accepted more than one week late.

At the end of the semester, your total lab score will be scaled to 250 and added to your points from Chem 122 (750 possible) to give your final letter grade for both courses (out of a total of 1000 points).

Regrading:

If you think you were graded incorrectly, you may submit your report for a regrade. Please keep in mind that it is worth neither your nor my time to regrade a lab report for 1 or 2 points, and unless the error is one of simple miscalculation of the total points, it is unlikely that your request will be successful. **Submit all regrade requests to Dr. Kincaid**; do NOT submit a regrade request to your TA. You have **1 week** after a lab is returned to you to submit a regrade request. To ensure proper record keeping do NOT write on your original lab report; instead, include a separate (small) sheet of paper with your reasons for requesting a regrade.

Missed labs:

If you fail to attend a lab OR discussion, you will receive a zero for the entire lab. It is your responsibility to contact Dr. Kincaid as soon as possible when you miss a lab or discussion. For approved university commitments, contact Dr. Kincaid at least one week in advance of your absence so that you can reschedule to attend a different section that same week. For unscheduled absences, such as severe illness, contact Dr. Kincaid as soon as you realize you will not be able to attend, and arrangements can be made to make up the lab. In the event that you need to make-up a lab or discussion, please consult the overall schedule to be aware of when other sections are performing the same experiment. (You still need to contact Dr. Kincaid to approve the make-up session.) Please note that for missed labs/discussions as well as make-up lab/discussions, your lab report will still be due at the regularly scheduled time.

Regardless of the reason for missing lab/discussion, you should absolutely contact Dr. Kincaid.

Lab Citizenship:

Anyone who pursues a career in the sciences will work within a group of other researchers in one way or another (unless you are extremely rich and extremely eccentric). Because of this, it is important to learn how to be a good lab citizen. Good lab citizenship generally can be summed up by the golden rule: treat others as you would like to be treated. Specifically, some key components are:

- ***Respect*** *for others in conversation and space use*
- ***Tidiness*** *in common use areas*
- ***Conscientious*** *use of shared reagents*
- ***Openness*** *to scientific discussion with labmates*
- *Leaving your work area in a* ***clean*** *and* ***safe*** *state*

Students under 18:

Your parents or legal guardian are required to sign a "Release and Hold Harmless Agreement" before you can work in the lab. Download this form from OwlSpace and turn in a signed paper copy to Sofia Medrano. Your parent may also fax this form to 713-348-3479.

If you have already done this for CHEM 123, you do not need to do it again for CHEM 124.

Special Needs:

Any student with a disability requiring accommodations in this class is encouraged to contact the instructor during the first two weeks of class. All discussions will remain confidential. Students should also contact the Disabled Student Services Office in the Ley Student Center.